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AUTOMOBILE MANUFACTURING AND THE
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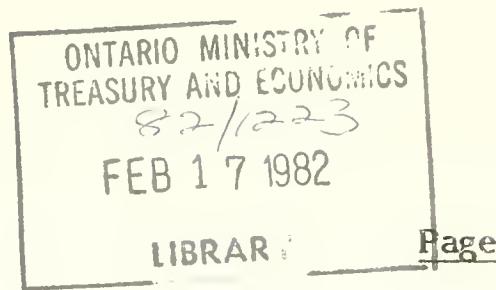
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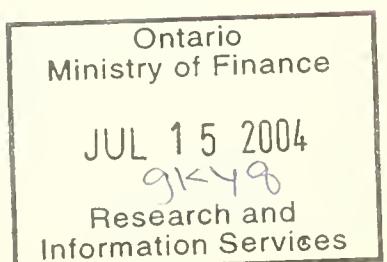
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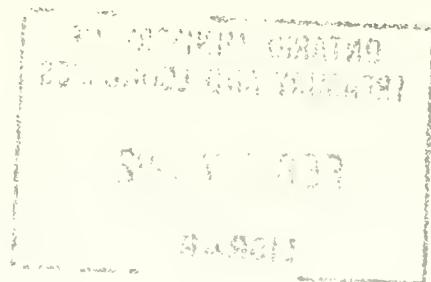
JULY 1

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I. SUMMARY

The North American automobile industry has recently experienced sales and employment levels extremely low by historical standards. Although the 1980 recession, high gasoline prices, and high interest rates have combined to reduce sales of new cars generally, North American automobile manufacturers have been hit hard by a shift in demand toward smaller cars. With its close ties to U.S. markets and with Canadian automobile buyers acting much like their U.S. counterparts, the Ontario automobile industry has not escaped the North American downturn.

The main focus of this report is an examination of the linkages of the automobile industry to all the other sectors of the Ontario economy which depend on it. At least 40 per cent of Ontario manufacturing production depends directly or indirectly on the auto industry. Some graphic highlights of the report's impact analysis:

- The direct impact of the sector's downturn since 1979:1 has been equivalent to a 7.3% loss in Ontario manufacturing production, or a 2.2% decline in Ontario all-sector output.
- When indirect impacts on supplying industries and those resulting from lost purchasing power of wages and salaries are included, these impacts rise to a 13.5% loss in Ontario manufacturing output and a full 6.4% loss in Ontario economy-wide output.
- This same period has seen Ontario manufacturing production and economy-wide output fall by only 8.7% and 2.2% respectively; in short, the province has been fortunate in having some sources of strength in other sectors partially offsetting the pervasive ripple effects of the auto sector slump.
- Between 1979:1 and 1980:2, \$6.3 billion of production has been lost in Ontario's economy due to the auto sector slump, of which \$4.0 billion is in the manufacturing sector.
- While each and every manufacturing sector has been adversely affected, auto sector-induced weakness has hit a number of industry groups disproportionately. Ontario textile production has been cut 18.4%; rubber and plastics production by 15.0%; primary metals by 12.9%; and metal fabricating output by 7.1%.
- The predominantly Ontario based auto and related production losses cut Canadian manufacturing production by 7.7%, 1979:1 to 1980:2.
- On the employment side, an annual loss of 91,500 Ontario man-years of employment will result if current auto production levels continue for an extended period of time. One-half of this loss will be in the manufacturing sector, with the primary metals (-3,500 man-years), textile (-2,400) and rubber and plastic (-2,900) sectors suffering greatest losses outside transportation equipment (itself -27,000 man-years).
- Ontario's auto and related employment losses represent 84% of the total Canadian employment impact.

The report also analyses the current performance of the auto sector reviewing the shift toward small cars; import growth; lackluster buyer attitudes; and continuing high inventories as hallmarks of the current downturn. Although 1980:4 may see a modest cyclical rebound, the industry's structural problems may well result in a continued downward employment trend in Ontario over the medium-term. On this front, the paper's sectoral outlook section probes projected sales; commitments to new product lines and vehicle composition; and producers's abilities to meet market changes, and concludes that the Ontario parts industry will have to develop new products, and retool under severe competition to maintain its North American market share:

- between 1980 and 1985, North American investment by the assemblers is expected to be \$75 billion, of which Canada is to receive approximately \$4.8 billion - insufficient to close our automotive trade deficit with the U.S.A.

Finally, the report presents an overview of recent policy proposals, and potential policy alternatives, an appendix to the analysis, and also appends several comments on the Auto Pact safeguards.

II. CURRENT PERFORMANCE OF THE AUTOMOBILE INDUSTRY

1. New Passenger Car Sales and Production

For 1971 through 1979, Canadian new passenger car sales averaged 941 thousand units per annum, somewhat less than one tenth of average U.S. car sales of 10,361 thousand units. Both in Canada and the U.S.A. new passenger car sales fell sharply in the second quarter of 1980, from a 1979 peak in Canada while in the U.S.A., sales had been weakening since 1978. Canadian sales in 1980:2 dropped to 822 thousand from a seasonally adjusted annual rate of 1,033 thousand cars in 1979:3.

MOTOR VEHICLE SALES HISTORY: CANADA AND U.S.A.
(Thousands of Units)

Table I

	Canada		United States	
	Motor Vehicles	New Passenger Cars	Motor Vehicles	New Passenger Cars
1971	940	781	12,336	10,239
1972	1,066	859	13,567	10,938
1973	1,227	971	14,558	11,410
1974	1,249	943	11,525	8,838
1975	1,317	989	11,091	8,614
1976	1,291	946	13,279	10,098
1977	1,345	991	14,843	11,168
1978	1,367	989	15,413	11,301
1979	1,396	1,003	14,127	10,647
1980 to Aug.*	1,272	961	11,826	9,166

Source: Ward's Automotive Yearbook, Statistics Canada, and the Motor Vehicle Manufacturers Association (U.S.)

* at annual rates

U.S. passenger car sales peaked at 11.9 million cars in 1978:3, falling to a 7.7 million annual rate in 1980:2. In percentage terms, Canadian auto sales dropped by 19.3 per cent and U.S. auto sales by 28.7 per cent between 1980:1 and 1980:2. From peak to date, unit auto sales declines have been:

- . 35.1 per cent in the U.S. from 1978:3 peak
- . 21.9 per cent in Canada from 1977:1 peak.

HISTORICAL AUTOMOBILE PRODUCTION DATA, CANADA AND U.S. Table 2
(Millions of Units)

	Canada	United States
1971	1.095	8.585
1972	1.147	8.824
1973	1.235	9.658
1974	1.185	7.331
1975	1.054	6.717
1976	1.146	8.498
1977	1.162	9.214
1978	1.143	9.177
1979	0.988	8.422
1980 to August*	0.816	6.226

Source: Ward's Automotive Yearbook and Statistics Canada

* at annual rates

Total North American automobile sales declined steadily over the first three quarters of 1979, recovered temporarily in 1979:4 and 1980:1, then plunged again in the second quarter of 1980. In response, auto producers cut back their output in 1979:3. In Canada, unit production dropped to 0.912 million; and in U.S. to 7.274 million in the first half of 1980.

Third quarter U.S. production is scheduled at 1.3 million units. Auto producers hope this level of output will allow them to reduce their high inventories of 1980 model cars before 1981 model cars become available in the fourth quarter. If they are not reduced substantially by the fourth quarter of 1980, automobile manufacturers will be forced to undertake further costly rebate and marketing programs, impairing corporate cash flow and artificially bringing forward demand at the expense of perspective sales of 1981 models.

The gasoline shortages in 1979:2, subsequent OPEC oil price increases and the U.S. recession have all contributed to the U.S. and Canadian auto sector slump.

- . Canadian 1980:2 auto production, after adjustment for inflation, is 40.7 per cent below its 1979:1 peak, with assembly production down 33.5 per cent and parts production down 50.6 per cent. Assembly and auto parts production in the second quarter was 0.7 per cent below its 1971 level.

Although some recovery in the auto sector is expected, it is unlikely that the auto sector will show strong advances in Ontario in the near future without substantial re-tooling efforts by the auto producers.

CANADIAN AUTO SECTOR PRODUCTION, 1978:1 to 1980:2
(1971 \$ millions)

Table 3

	Auto Assembly	Auto Parts	Auto Assembly and Parts
1978:1	1,334.4	941.6	2,276.0
1978:2	1,390.7	1,013.7	2,404.4
1978:3	1,510.5	1,060.5	2,571.0
1978:4	1,431.6	1,107.2	2,538.8
1979:1	1,490.2	1,083.6	2,573.8
1979:2	1,311.3	906.8	2,218.1
1979:3	1,280.4	812.8	2,093.2
1979:4	1,182.1	754.1	1,936.2
1980:1	1,092.0	679.1	1,771.1
1980:2	991.1	535.7	1,526.8
Per Cent			
Decline 1980:2/1979:1	-33.5	-50.6	-40.7

Source: Statistics Canada.

2. Buyer Attitudes Lackluster and Favour Imports

U.S. CONSUMER AUTO-BUYING ATTITUDES
(Per Cent of Respondents)

Table 4

	July 1979	July 1980
Good Time to Buy	32	36
Uncertain Time	16	14
Bad Time to Buy	52	50

Source: University of Michigan, Survey Research Centre.
The question was: "speaking of the automobile market
- Do you think the next 12 months or so will be a good
or a bad time to buy a car?"

The decline in U.S. automobile sales in 1979 and 1980 can be attributed to the following factors:

- Recession: In each year between 1970 and 1978, U.S. gross national product and motor vehicle sales have moved together in the same direction. In 1979, however, U.S. car sales declined despite GNP growth. The sales drop became especially severe in 1980:2, when the U.S. economy entered the recession.
- Fuel Prices: The two episodes of sharply rising U.S. gasoline prices in 1973-1974 and 1979 were accompanied by major declines in vehicle sales. In 1979-1980, this was accomplished by a shift in preferences away from large cars toward small ones, thereby favouring imports.
- Fuel Shortages: Gasoline shortages undoubtedly contributed significantly to 1979 U.S. auto sales weakness, particularly in the second quarter. In June 1979, 26 per cent of those who thought it a bad time to buy cited fuel shortages. With more stable 1980 gasoline supplies, fuel shortages were cited by only 6 per cent in July 1980.
- High Interest Rates and Credit Controls: In a May 1980 study by the Survey Research Centre of the University of Michigan, 29 per cent of respondents felt it a bad time to purchase automobiles because of high interest rates and credit problems -- more than double the 13 per cent who felt that way in January. Consumer credit controls in the U.S. appear to have also restrained second quarter 1980 auto sales. The 1979 increase in U.S. interest rates is estimated by a leading forecasting group to have reduced new car sales about 8 per cent.
- By July 1980, only 11 per cent cited high interest rates as the key factor making now a "bad time to buy" a car.

3. The Shift Toward Small Cars

Over the past decade, with a temporary reversal in 1976 and 1977, U.S. automobile demand has shifted toward small cars and away from larger ones. Between 1971 and July 1980, the large car market share was more than halved, while the small car share nearly doubled.

SIZE DISTRIBUTION OF U.S. AUTO SALES, 1970-1980
(Per Cent Shares, Sales in Millions of Units)

Table 5

	Subcompact and Compact Share	Sales	Intermediate Share	Sales	Full Size and Luxury Share	Sales
1970	38	3.203	22	1.854	40	3.371
1971	39	3.794	20	1.946	41	3.989
1972	39	4.090	22	2.307	39	4.090
1973	43	4.881	22	2.497	35	3.973
1974	48	4.176	25	2.175	27	2.349
1975	53	4.461	24	1.983	23	1.900
1976	48	4.680	27	2.633	25	2.438
1977	47	5.088	28	3.031	25	2.707
1978	48	5.254	28	3.065	24	2.627
1979	56	5.788	23	2.377	21	2.170
1980:1*	64	6.412	20	1.984	16	1.648
1980:2*	65	5.588	20	1.664	15	1.304
1980:July*	65	6.000	19	1.800	16	1.464

Source: Ward's Automotive Yearbook.

* Annual rate.

Table 6 shows that North American auto producers were able to satisfy only part of the higher demand for subcompact and compact cars. The short-fall of North American production from growing demand was made up by offshore auto imports to the U.S., shown in the "short-fall" column in Table 6. While U.S. sales of domestic subcompacts almost doubled between 1976 and 1979, small car imports also increased by approximately 50 per cent.

SIZE DISTRIBUTION OF U.S. SALES OF DOMESTIC AUTOS, 1976-1979
(Per Cent Shares in Brackets, Sales in Thousands of Units)

Table 6

	Subcompact	Compact	Short-Fall*	Intermediate	Full-Size	Luxury
1976	947 (11.6)	2,217 (27.1)	1,516 -	2,707 (33.1)	1,860 (22.7)	457 (5.6)
1977	929 (10.7)	2,168 (24.9)	1,991 -	2,876 (33.0)	2,204 (25.3)	540 (6.2)
1978	1,170 (13.2)	2,151 (24.3)	1,933 -	2,907 (32.8)	2,070 (23.4)	558 (6.2)
1979	1,695 (21.5)	1,863 (23.6)	2,230 -	2,239 (28.3)	1,639 (20.7)	464 (5.9)

Source: Ward's Automotive Yearbook

* Short-fall = import sales of subcompact and compact models.

4. Growth in Imports

The shift in the U.S.A. toward smaller cars, accompanied by sharply rising sales of overseas imports, resulted in a doubling of the import share of the U.S. car market between 1971 and July 1980. The rise in import share reflects the availability of fuel-efficient overseas models, competitive import prices, and a perception of better quality in the overseas autos (See Table 7).

. By July 1980, the U.S. import share had reached 29.7 per cent, from 17.8 per cent in 1978. Sales by North American producers have fallen more than 35 per cent between May 1979 and May 1980; import sales by only 20 per cent.

Canadians have not abandoned large cars to the same degree as their U.S. counterparts. In 1979, for example, intermediate and full size cars still accounted for almost two-thirds of domestic make sales compared to less than half in the U.S. Consequently, the overseas imported car holds a smaller share of the Canadian market and one that is not high by Canadian historical standards. One explanation of Canada's lower overseas import share is U.S. gasoline prices, now well above those in Canada. It is also the perception of U.S. consumers that the U.S. government favours further price increases. If Canadian oil prices rise sharply, Canadian consumers may also be expected to move significantly in favour of smaller cars. How much of this demand spills over into off-shore imports depends on the ability of North American producers to market more fuel efficient models.

THE MARKET FOR IMPORTED AUTOMOBILES, CANADA AND U.S., 1973-1980
(Shares in Percent, Sales in Thousands of Units)

Table 7

	Canada			United States				
	Domestically Produced	Imported from U.S.	Offshore Imports	Total Sales	Domestically Produced	Imported from Canada	Offshore Imports	Total Sales
1973	31.6	49.0	19.4	971	77.2	7.6	15.2	11,410
1974	31.5	53.1	15.5	943	75.2	9.1	15.7	8,838
1975	29.0	55.1	15.6	990	73.6	8.3	18.1	8,614
1976	24.4	59.5	16.2	946	78.2	8.0	14.8	10,098
1977	21.4	59.1	19.6	992	74.1	7.4	18.5	11,168
1978	27.8	54.8	17.5	989	75.6	6.8	17.6	11,301
1979	28.1	58.0	13.9	1,003	72.7	5.5	21.8	10,647
1980:1*	18.7	62.9	18.4	1,020	67.9	5.8	26.3	10,040
1980:2*	25.2	57.6	18.6	817	66.0	6.5	27.5	8,556
1980:July*	42.2	37.1	20.7	980	65.7	4.6	29.7	9,252

Source: Statistics Canada, Ward's Automotive Yearbook, and the Motor Vehicle Manufacturers Association.

* Annualized rates

(a) Availability of Fuel Efficient Domestic Cars

The overall swing in sales toward smaller more fuel efficient cars has concentrated sales in that part of the auto market where domestic manufacturers historically have competed on a very limited basis. Therefore, small car buyers are faced with more choice among the imports. For subcompact cars, only 5 of 25 of the most fuel efficient models are domestically produced. For all small car models, 25 are produced domestically, 68 are imported. Despite their limited offerings, domestic manufacturers have retained approximately 60 per cent of the compact and sub-compact market. This suggests that the competitive position of the domestic manufacturers within these size classes is considerably better than often supposed. In fact, both the Chevy Chevette and the Ford Mustang, in 1979 and the first half of 1980, outsold the Datsun 210 and Toyota Corolla, despite the superior fuel ratings of these Japanese models.

1980 MODEL OFFERINGS OF DOMESTIC AND
OFFSHORE MANUFACTURERS, BY SIZE CLASS

Table 8

	Number of Models		
	Imports	Domestics	Total
2-Seaters	10	1	11
Mini-compact	7	2	9
Subcompact	35	15	50
Compact	16	7	23
Mid-size	3	28	31
Large	0	19	19
Total	71	72	143

Source: U.S. Congressional Budget Office.

SHARE OF U.S. COMPACT AND SUBCOMPACT CAR MARKET HELD BY
DOMESTIC AND FOREIGN MANUFACTURERS, 1973-1980

Table 9

	Market Share Percent Domestic	Market Share Percent Imported	Total Sold (In thousands of Units)
1973	63.8	36.2	4,877.1
1974	67.2	32.8	4,296.0
1975	65.9	34.1	4,641.9
1976	69.1	30.9	4,858.8
1977	60.9	39.1	5,285.6
1978	63.5	36.5	5,474.0
1979	61.4	38.6	6,024.0
1980			
January	56.7	43.3	501.9
February	57.8	42.2	520.3
March	61.4	38.6	580.4
April	58.5	41.5	486.3
May	56.9	43.1	457.5
June	58.1	41.9	453.1
July	54.2	45.8	500.1

Source: Ward's Automotive News.

(b) U.S. vs. Offshore Pricing: Compacts and Subcompacts

Domestic manufacturers' success in retaining their share of the compact car market is due in part to the slight price advantage that domestic cars have had over imports. In the first half of 1979, as shown in Table 10, actual prices paid, including discounts, for domestic compact cars averaged some 15 to 20 per cent less than prices paid for imports. This probably somewhat overstates the price differential since luxury foreign models are included in the foreign average while luxury North American cars, such as the Cadillac Seville, are not considered compact cars and are therefore not reflected in the North American average price. Table 11 shows that this price differential can be confirmed by comparing the sales-weighted list prices of the five best-selling domestic small car models and the five best-selling imports. The sales-weighted list price for the five top-selling domestic models is approximately 10 per cent below the average price for the import models.

To the consumer, however, this initial price differential could be offset by the lower operating costs of the imports (See Table 12). The total lifetime cost of four comparable foreign and domestic models appears to be approximately equal, the domestics having no clear cost advantage over the imports, according to a U.S. Congressional Budget Office Study.

RELATIVE COMPACT CAR PRICES: LIST PRICE LESS DISCOUNTS
DOMESTIC VS. OFFSHORE IMPORTS: JAN. 1979-JUNE 1979

Table 10

	Average US \$ Price of Domestic Compacts	Average US \$ Price of Imports	Price Ratio Domestic Compacts to Imports
January	5,290	6,687	.79
February	5,258	6,442	.82
March	5,215	6,317	.83
April	5,240	6,362	.82
May	5,294	6,323	.84
June	5,390	6,395	.84

Source: Unpublished data from U.S. Department of Commerce,
Bureau of Economic Analysis

COMPARISON OF U.S. \$ LIST PRICES FOR
SELECTED DOMESTIC AND FOREIGN MODELS

Table 11

	Unit Sales January - June 1980	List Price (U.S. \$'s)
Domestic		
Chevette	202,128	4,138
Citation	201,263	5,206
Malibu	135,437	5,886
Mustang	128,103	5,743
Fairmont	164,237	5,005
Sales-Weighted Average		5,100
Import		
Toyota Corolla	140,552	5,598
Datsun 210	103,099	4,899
Toyota Celica	79,924	6,659
Honda Accord	92,305	6,799
Honda Civic	68,407	4,949
Sales-Weighted Average		5,762

Source: Ward's Automotive Reports and Consumer Reports

LIFETIME U.S. DOLLAR COSTS OF COMPARABLE DOMESTIC
AND IMPORTED MODELS*

Table 12

Model	Initial Vehicle Cost (US \$'s)	EPA Fuel Economy Rating (mpg)	Discounted Lifetime Fuel Costs (US \$'s)	Estimated 10-Year Scheduled Maintenance Costs (US \$'s)	Total Lifetime Vehicle Costs (US \$'s)
Datsun 210 (2-door hatchback)	4,605	31	2,844	1,424	8,873
Toyota Corolla (2-door hatchback)	5,262	26	3,392	1,391	10,045
Chevy Chevette (2-door hatchback)	4,163	26	3,392	1,221	8,776
Dodge Omni (2-door hatchback)	5,065	23	3,834	980	9,879

Source: U.S. Congressional Budget Office

* Assumes 100,000 mile vehicle life, \$1.50 per gallon gas price, and a borrowing rate of 15 percent.

(c) The Quality Issue

Many buyers consider imported cars of higher quality than North American. For example in its 1980 ratings, Consumer Reports examined 85 new domestic and imported models for price, fuel mileage, repair record, comfort and performance. Most of the top rated small cars were imports. Only one of eleven U.S. small cars received a top rating. Consumer Reports also rated domestic and imported cars on the basis of a reader survey. Eighty-eight per cent of the imports were rated by consumers as "better than average" or "much better than average". Only 11 per cent of domestic models were ranked "better than average". This perception is also supported by Ford's market research division, which states that American car buyers perceive Japanese cars to be of higher quality and better design than domestically produced autos. In addition, engineering judgement appears to confirm this widespread consumer view. In a recent survey conducted by Ward's Automotive World, domestic automotive engineers consistently ranked Japanese cars above U.S. cars in quality.

5. Inventories Remain High

The current weakness of auto markets is reflected in the difficulty the industry has been experiencing in keeping auto inventories in line with sales. The automobile industry considers 60 days-supply of cars an ideal inventory level but the severe drop in automobile demand has made it difficult for producers to achieve this target. Although U.S. inventories have been sharply reduced in 1980, low sales rates kept the days-supply figures well above the optimum. Imported automobiles experienced more favourable inventory positions, ranging from 41 to 59 days-supply in the first half of 1980. While domestic automobile inventory positions varied widely across model types, all size classes included models with excess stocks. In general, the current inventory situation is unfavourable to Ontario, as Ontario-produced models are experiencing higher than average inventory to sales rates. If the consumer swings back to intermediate and full size cars the inventory position for models produced in Ontario could improve.

U.S. DEALER MONTH-END INVENTORIES OF DOMESTIC AUTOMOBILES
(Thousands of Units, Includes Cars in Transit)

Table 13

	Month	Units	Days-Supply
1976	June	1,662.0	52
	July	1,456.0	51
1977	June	1,811.3	51
	July	1,764.2	60
1978	June	1,911.1	52
	July	1,724.5	57
1979	June	2,150.4	80
	July	2,060.0	74
1980	June	1,627.0	80
	July	1,506.0	72

Source: Ward's Automotive News.

U.S. DEALER INVENTORIES OF ONTARIO- PRODUCED MODELS
(JULY 31, 1980*)

Table 14

	Model	Size Class	Days-Supply
General Motors	Chevrolet	full size	87
	Monte Carlo	intermediate	83
	Malibu	intermediate	85
	Pontiac	standard	73
	Le Mans	intermediate	89
Ford	Ford LTD	full size	50
	Fairmont	compact	77
	Zephyr	compact	92
	Pinto	subcompact	126
	Bobcat	subcompact	125
	Mark VI	luxury	48
Chrysler	Cordoba	intermediate	144
	Mirada	intermediate	142
	Imperial	full size	107

Source: Ward's Automotive Reports

* Does not include vans or recreational vehicles.

In spite of production declines, high days-supply levels have persisted during 1980, reflecting the impact of the recession on automobile sales. These high inventory levels, in relation to market demand, will constrain automobile production during the remainder of 1980 and into 1981, as many plants are tooled to produce only the models already in excess supply. Auto production in 1981 will depend on:

- The strength of the U.S. recovery.
- Whether U.S. automobile consumers repeat the 1976-1977 pattern by retreating from small cars as memories of the 1979-1980 oil supply disruptions fade.

III. IMPLICATIONS OF AUTO SECTOR SLUMP

1. Impacts on other Ontario and Canadian Industries

The impacts of auto sector weakness on Ontario and Canadian industry are threefold:

- Direct impacts through the loss of production in auto assembly and parts;
- Impacts of auto sector production losses on supplying industries such as iron, steel, zinc, aluminum, rubber and plastic products, textiles etc;
- Impacts of the lost purchasing power of declining wages in auto and auto dependent sectors.

By 1980:2, the impact on the Ontario economy of auto sector weakness since 1979:1 had become very large, attesting to the far greater dependence on and vulnerability of the Ontario economy to the current structure of the auto sector with its large car emphasis:

- The direct impact of the decline in auto assembly and parts production since 1979:1 has been equivalent to a 7.3 per cent loss in Ontario manufacturing production or a 2.2 per cent decline in Ontario all-sector output.
- These impacts rise to a 13.5 per cent loss in Ontario manufacturing output and a full 6.4 per cent loss in Ontario economy-wide output when the indirect impacts on supplying industries and those resulting from the lost purchasing power of wages and salaries are included.

Since the same period has, in fact, seen Ontario manufacturing production and economy-wide output fall by only 8.7 and 2.2 per cent respectively, the province was fortunate in having some sources of strength in other sectors partially offsetting the pervasive ripple effects of the auto sector slump.

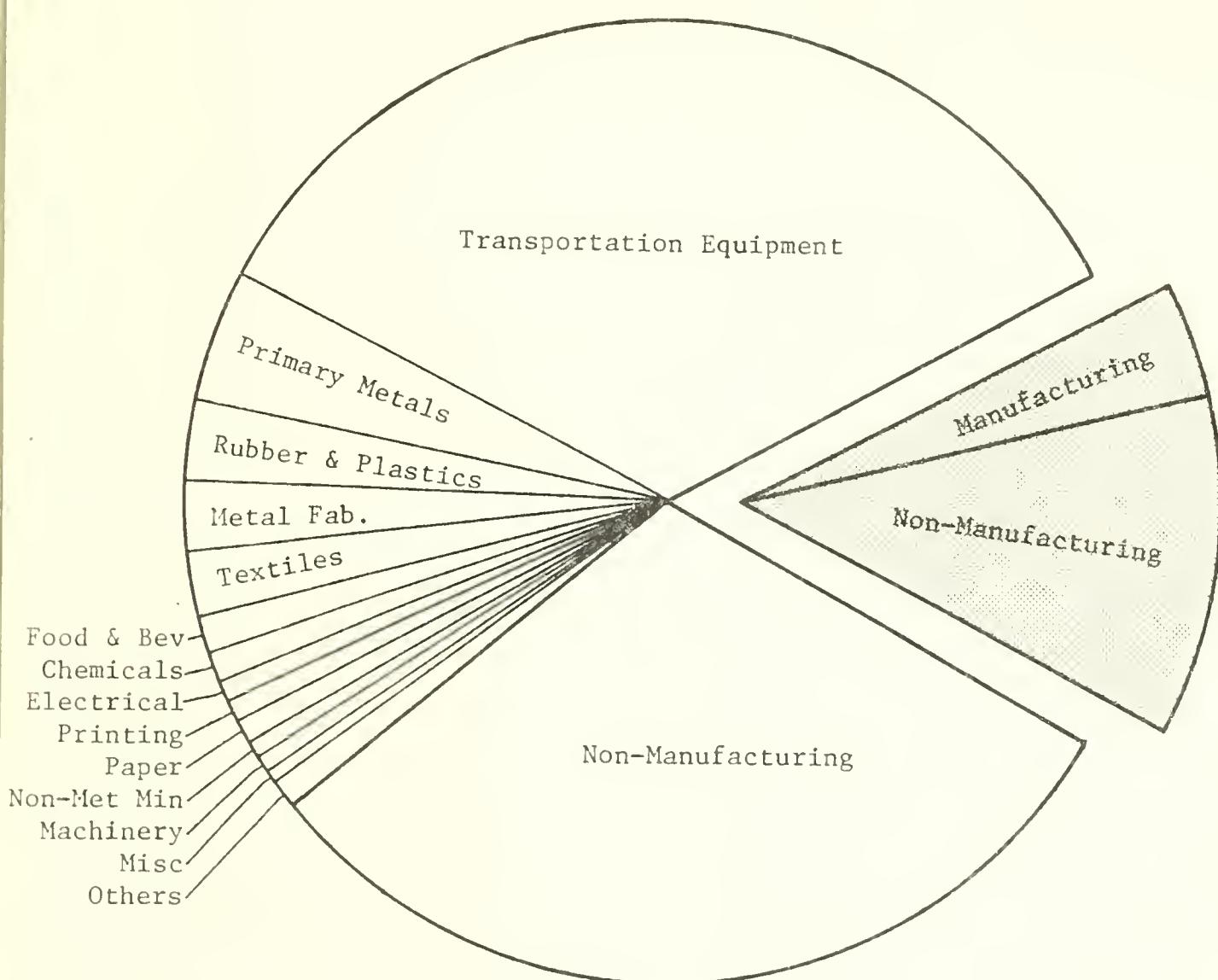
Looking at these impacts from another perspective, had 1980:2 auto assembly and parts production continued at its 1979:1 peak levels, Ontario all-industry production would have been 6.5 per cent higher; Canadian production 3.0 per cent higher. Ontario manufacturing production would have been 14.8 percentage points higher; Canada's manufacturing production 8.0 percentage points higher.

Between 1979:1 and 1980:2, \$6.3 billion of production has been lost in Ontario's economy due to the auto sector slump, of which \$4.0 billion is in the manufacturing sector. While each and every manufacturing sector has been adversely affected by the auto sector slump, textiles, rubber, plastic, primary metals, metal fabricating, non-metallic minerals, printing and publishing, paper, and petroleum and coal and chemicals have suffered disproportionately.

The overall impact on other Ontario industries is detailed in Tables 15 and 17. Of the overall impact, equivalent to a reduction of Ontario manufacturing production of 13.5 per cent (7.7 per cent in Canada), auto sector weakness since 1979:1 has cut:

- Ontario transportation equipment production 46.7 per cent -- 35.4 per cent in Canada;
- Ontario textile production 18.4 per cent -- 10.6 per cent in Canada;

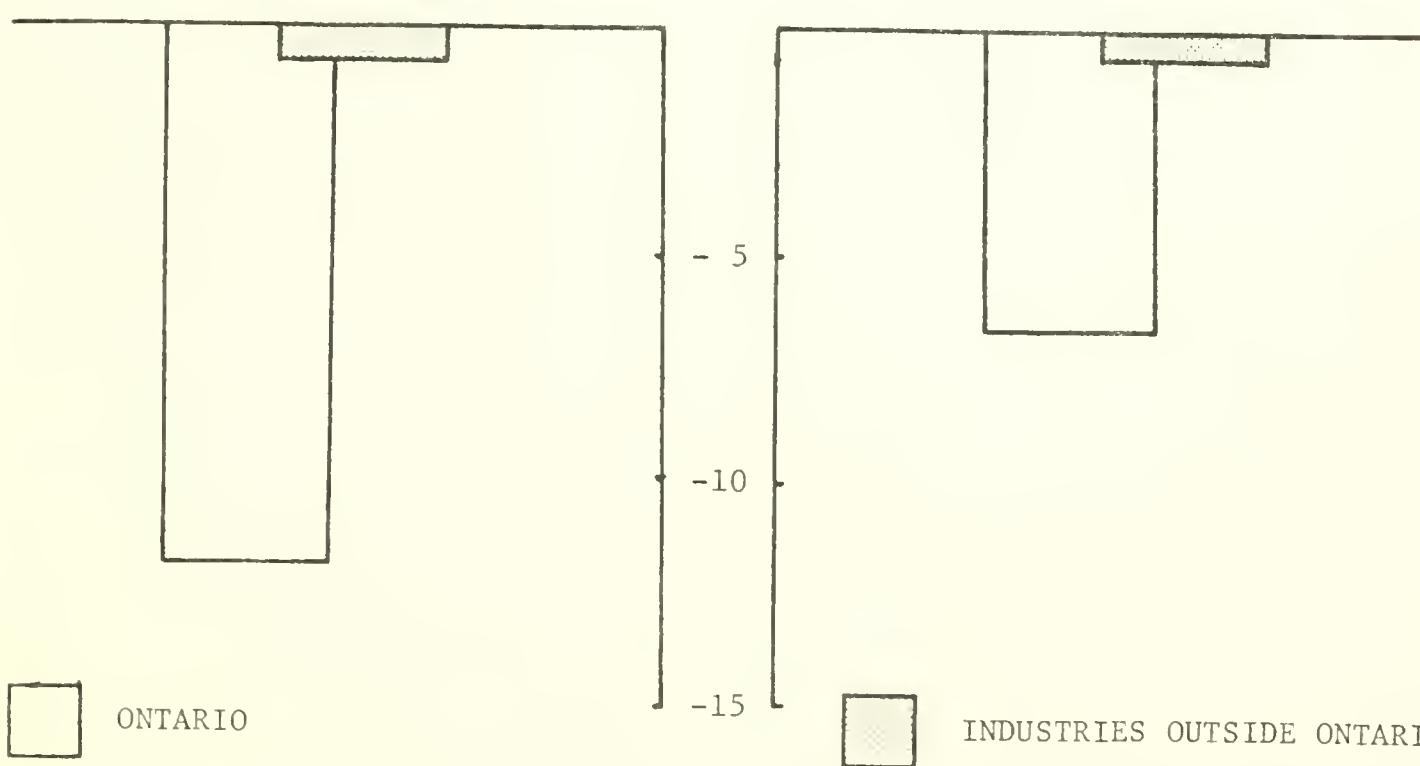
AUTO RELATED PRODUCTION LOSSES: BY INDUSTRY AND REGION



PRODUCTION LOSS IN PER CENT

MANUFACTURING

ALL INDUSTRIES



- Rubber and plastic production 15.0 per cent in Ontario; 10.9 per cent in Canada;
- Primary metals production 12.9 per cent in Ontario and 8.5 per cent in Canada.
- Ontario metal fabricating sector output 7.1 per cent; 4.7 per cent in Canada.
- Other Ontario sectors which have experienced significant auto-related declines include non-metallic minerals (-5.3 per cent), printing and publishing (-3.9 per cent), paper (-4.0 per cent), petroleum and coal (-3.8 per cent) and chemicals (-3.6 per cent).
- Overall, the impact on total Ontario manufacturing production has been -13.5 per cent; in Canada -7.7 per cent.

ONTARIO PRODUCTION LOSSES ATTRIBUTABLE TO
THE AUTO SECTOR SLUMP: 1979:1 - 1980:2

Table 15

Relative Production Weakness	Auto Sector Impact; As Per Cent of 1979:1 Level		Per Cent of 1980:2 Level
Food and Beverage	1.5	-3.1	-3.0
Tobacco	0.1	-1.8	-2.2
Rubber and Plastic	3.4	-15.0	-17.4
Leather	0.1	-2.6	-2.8
Textile	2.7	-18.4	-19.6
Knitting Mills	0.1	-3.0	-3.0
Clothing	0.2	-3.0	-3.4
Wood	0.2	-2.7	-2.7
Furniture & Fixture	0.2	-2.4	-2.3
Paper	0.8	-4.0	-3.9
Printing & Publishing	0.9	-3.9	-3.5
Primary Metals	5.3	-12.9	-13.8
Metal Fabricating	2.9	-7.1	-7.7
Machinery	0.7	-2.0	-2.1
Transportation Equipment	40.8	-46.7	-75.6
Electrical Products	0.9	-2.3	-2.2
Non-metallic Minerals	0.8	-5.3	-6.3
Petroleum and Coal	0.2	-3.8	-3.3
Chemical	1.2	-3.6	-3.6
Misc. Manufacturing	0.5	-2.7	-2.7
Total Manufacturing	63.5	-13.5	-14.8
Total (All Industries)	100.0	-6.4	-6.5

Source: Economic Research Branch.

The effects of auto sector weakness have been substantial for the Canadian economy as well, although with 90 per cent of auto assembly and parts production, Ontario has experienced the worst of the impact.

- Between 1979:1 and 1980:2, Canadian auto and related production losses cut Canadian all-industry production by 3.0 per cent, and Canadian manufacturing production by 7.7 percent -- vs. the 6.4 and 13.5 per cent drops suffered by Ontario.

On the employment side, an annual loss of 91,500 Ontario man-years of employment will result if current auto production levels continue for an extended period of time. 45,000 Ontario man-years of work would be lost in the manufacturing sector. Apart from the transportation equipment sector, significant job losses would be experienced in the primary metals, metal fabricating, rubber and plastic and textile sectors. Man-years lost in Ontario would be 84 per cent of Canadian man-years lost.

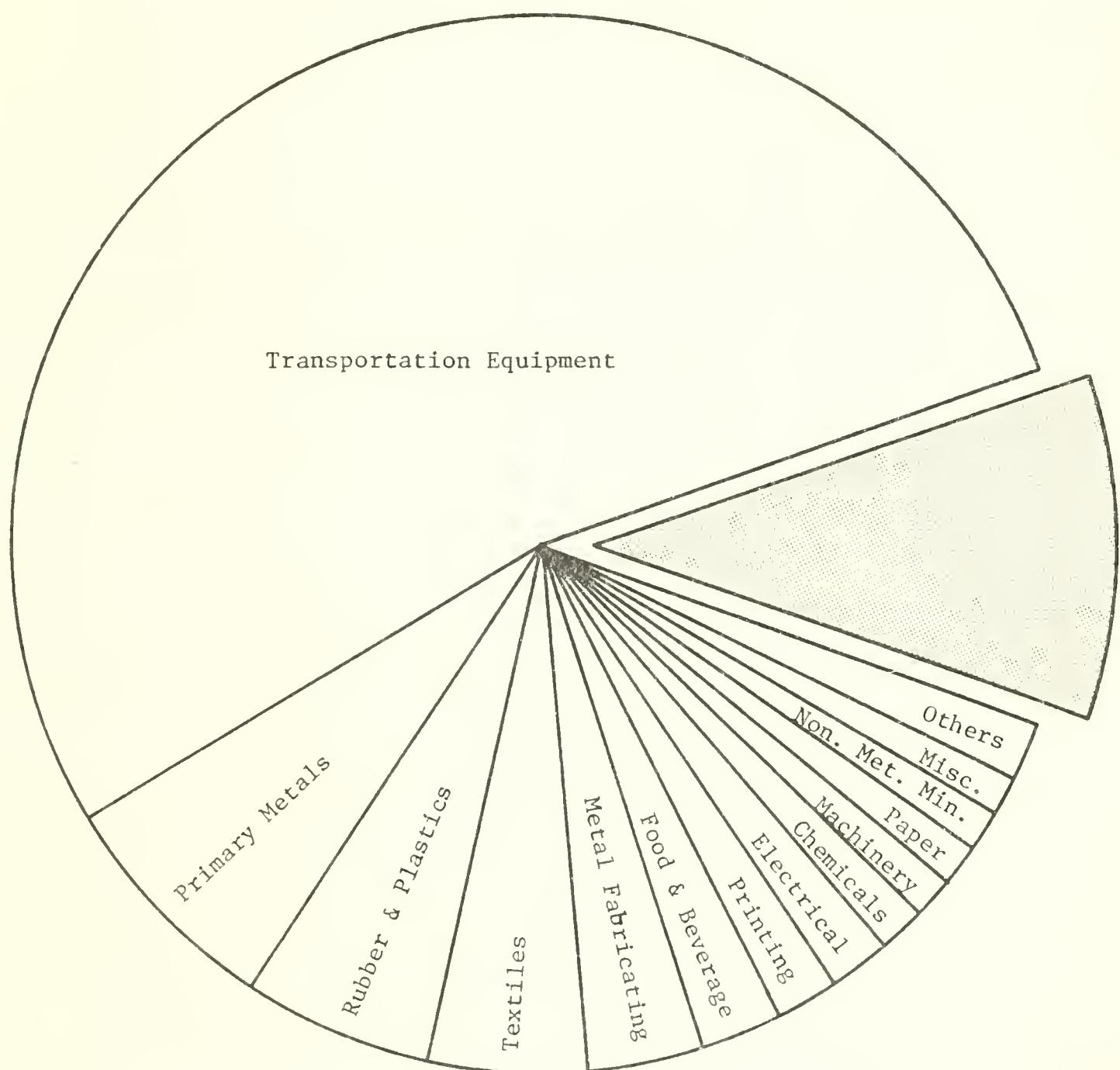
CANADIAN PRODUCTION LOSSES ATTRIBUTABLE TO THE AUTO SECTOR SLUMP: 1979:1 - 1980:2

Table 16

Relative Production Weakness	Auto Sector Impact; As	
	Per Cent of 1979:1 Level	Per Cent of 1980:2 Level
Food and Beverage	1.7	-1.8
Tobacco	0.1	-2.1
Rubber and Plastic	3.0	-10.9
Leather	0.1	-2.6
Textile	2.6	-10.6
Knitting Mills	0.2	-2.8
Clothing	0.5	-2.1
Wood	0.2	-0.7
Furniture & Fixture	0.2	-1.8
Paper	1.1	-1.8
Printing & Publishing	0.9	-2.4
Primary Metals	5.3	-8.5
Metal Fabricating	2.7	-4.7
Machinery	0.6	-1.5
Transportation Equipment	34.7	-35.4
Electrical Products	0.9	-1.9
Non-Metallic Minerals	0.7	-2.9
Petroleum and Coal	0.3	-2.1
Chemical	1.4	-2.9
Misc. Manufacturing	0.5	-2.2
Total Manufacturing	57.7	-7.7
Total (all industries)	100.0	-3.0

Source: Economic Research Branch.

AUTO-RELATED MANUFACTURING JOB LOSSES: BY INDUSTRY AND REGION



ONTARIO

MANUFACTURERS OUTSIDE ONTARIO

EMPLOYMENT LOSSES IN ONTARIO AND CANADA ATTRIBUTABLE TO AUTO
SECTOR SLUMP: BETWEEN 1979:1 and 1980:2

Table 17

	Ontario Employment (000's man years)	Canadian Employment (000's man years)
Food and Beverage	1.24	1.75
Tobacco	0.03	0.09
Rubber and Plastic	2.86	3.18
Leather	0.17	0.30
Textile	2.43	3.07
Knitting Mills	0.10	0.27
Clothing	0.31	0.95
Wood	0.17	0.30
Furniture and Fixtures	0.25	0.37
Paper	0.63	0.93
Printing and Publishing	0.96	1.16
Primary Metals	3.50	4.19
Metal Fabricating	1.86	2.13
Machinery	0.64	0.73
Transportation Equipment	26.57	26.71
Electrical Products	0.89	1.08
Non-Metallic Minerals	0.60	0.68
Petroleum and Coal	0.17	0.21
Chemical	0.74	1.04
Misc. Manufacturing	0.54	0.69
Total Manufacturing	44.66	49.83
Total (all industries)	91.46	109.12

Source: Economic Research Branch.

2. Impact on Other Industries in the U.S.A.

The impact of weak auto sector performance on other industrial sectors has also been large in the U.S.A. According to U.S. Congress Budget Office, the U.S. automobile industry is the largest single American user of steel, accounting for about 25 per cent of consumption. It uses more than half of U.S. malleable iron, one-third of zinc, 17 per cent of aluminum, and almost 60 per cent of its synthetic rubber production. For every 100 automobile workers, 105 workers are required in supplying industries and wages spent by these workers help to support other jobs in the U.S. economy. About 350,000 workers in supplying industries are estimated to be currently laid off as a result of the auto sector slump. When added to the 250,000 unemployed auto industry production workers and 100,000 dealer employees, a total of about 700,000 people are unemployed in the U.S. because of the slowdown in automobile production.

DIRECT U.S. LABOUR REQUIREMENTS IN SUPPLYING INDUSTRIES
(JOBS PER 100 JOBS IN MOTOR VEHICLES
AND MOTOR VEHICLE EQUIPMENT)

Table 18

Industry	Jobs
Miscellaneous Fabricated Textile Products	3.8
Paints and Allied Products	0.6
Tires and Inner Tubes	1.8
Miscellaneous Rubber Products	1.6
Plastic Products	1.1
Glass	2.3
Blast Furnaces and Basic Steel Products	6.0
Iron and Steel Foundries and Forgings	8.7
Primary Copper and Copper Products	0.5
Primary Aluminum and Aluminum Products	1.1
Screw Machine Products	2.0
Metal Stamping	9.6
Cutlery, Hand Tools and General Hardware	3.7
Other Fabricated Metal Products	2.5
Engines, Turbines, Generators	1.4
Metal Working Machines	2.4
General Industrial Machinery	1.7
Machine Shop Products	4.7
Service Industry Machines	2.9
Electrical Industrial Apparatus	1.3
Miscellaneous Electrical Products	4.0
Aircraft	0.5
Scientific and Controlling Instruments	1.1
Railroad Transportation	2.6
Truck Transportation	4.0
Air Transportation	0.5
Wholesale and Retail Trade	10.2
Finance, Insurance, Real Estate	2.2
Services	10.8
Other	9.4
Total	105.0

Source: U.S. Department of Labor, Bureau of Labor Statistics.

3. Auto Sector Employment

The auto sector has traditionally been an important source of high income employment in Ontario. Between 1974 and 1979, Ontario accounted for over 80 per cent of average Canadian employment in motor vehicle production.

- Ontario motor vehicle parts and assembly workers' weekly earnings are 28 per cent higher than the Ontario average industrial composite. Motor vehicle assembly workers earn 41 per cent more than the average industrial worker; parts employees 20 per cent more.

AUTO INDUSTRY EMPLOYMENT

Table 19

	Canada			Ontario		
	Total Motor Vehicles	Auto Assembly	Parts and Accessories	Total Motor Vehicles	Auto Assembly	Parts and Accessories
1974	108,083	47,084	45,780	87,922	38,972	43,836
1975	99,021	43,207	41,194	79,895	36,051	39,635
1976	106,825	46,571	46,186	87,693	38,818	44,856
1977	111,660	50,556	48,644	94,059	42,639	47,304
1978	117,987	52,804	52,101	99,181	43,726	50,573
1979	117,209	52,593	49,838	96,068	42,711	44,216
Average	110,254			90,803		

Source: Statistics Canada

Unemployment in the North American automobile industry is very severe. In the second quarter of 1980, 26,000 Ontario auto sector employees were on indefinite layoff -- one third of the average 1971-1978 industry labour force. In the U.S.A. indefinite layoffs reached 246,350.

ONTARIO AUTO INDUSTRY EMPLOYMENT*, BY QUARTER

Table 20

		Total Motor Vehicles	Assembly	Parts and Accessories
1978:	1	97,516	43,636	49,524
	2	99,926	43,756	51,179
	3	100,295	43,685	51,829
	4	102,352	43,827	53,580
1979:	1	100,817	43,508	52,132
	2	100,771	44,146	51,135
	3	96,196	43,480	47,315
	4	89,748	39,709	45,010
1980:	1	83,221	35,782	42,319
	2	76,488	33,377	36,393

Source: Statistics Canada

* For establishments with more than 20 employees.

If Ontario sees a modest cyclical rebound in consumer demand, auto sector employment may rebound in 1980:4 as 1981 automobile models come into production. Nonetheless, there is considerable danger that the industry's structural problems may result in a downward employment trend in the industry over the medium term. The structural problems include:

- The mismatch between the composition of cars produced and sold,
- The heavy demands on the auto parts industry to narrow the range of product offerings, develop new products, retool, and increase production runs.

4. The Assembly Configuration of Ontario's Auto Sector

In 1980, Ontario assembly plants were more heavily weighted toward large cars than were U.S. plants. This situation will not change in 1981. G.M. of Canada will continue to produce full-size and intermediate cars in 1981, delaying production of more fuel efficient models until 1982:3, when it will start assembling subcompact J cars in Oshawa. Ford, which is already assembling compact and subcompact models in St. Thomas, will convert this plant to turn out its "world car" Escort/Lynx subcompact models beginning in January 1981. Chrysler will continue to produce its extremely unpopular intermediate models at Windsor in 1981, while American Motors will assemble two compact models which were poor sellers in 1980.

MODELS AND SIZES OF ONTARIO-PRODUCED AUTOS

Table 21

		1980		1981		
		Model	Size Class	Model	Size Class	
General Motors	Oshawa	Chevrolet Monte Carlo	Full Size Intermediate	Chevrolet Monte Carlo	Full Size Intermediate	
		Malibu	Intermediate	Malibu	Intermediate	
		Pontiac	Full Size	Pontiac	Full Size	
		Le Mans	Intermediate	Le Mans	Intermediate	
	Scarborough	Sportvan	Compact Van	Chevy Van	Compact Van	
		Vandura	Compact Van	Sportvan	Compact Van	
		Rally	Compact Van	Vandura	Compact Van	
				Rally	Compact Van	
Ford	Oakville	Ford LTD	Full Size	Ford LTD	Full Size	
		Club Wagon	Compact Van	Econoline	Compact Van	
				Club Wagon	Compact Van	
	St. Thomas			Light Duty Truck		
		Fairmont	Compact	Escort	Sport Subcompact	
Chrysler	Windsor	Zephyr	Compact	Lynx	Sport Subcompact	
		Pinto	Subcompact			
		Bobcat	Subcompact			
		Cordoba	Intermediate	Cordoba	Intermediate	
		Mirada	Intermediate	Mirada	Intermediate	
		Sportsman	Compact Van	Imperial	Luxury	
		Voyager	Compact Van	Ram Van	Compact Van	
American Motors	Brampton	Jeep	Recreational Vehicle	Ram Wagon	Compact Van	
				Voyager	Compact Van	
		Concord		Compact		
		Eagle		Compact		

Source: Economic Research Branch

Given the planned 1981 assembly configuration, a key factor determining Ontario assembly employment will be the extent of the recovery in North American demand for large and medium size cars. This may depend on OPEC pricing and production developments.

5. Auto Sector Trade

Auto Pact covers assembled vehicles trade -- although there is some doubt about the feasibility of enforcing Pact production safeguards. It does not, however, include any requirements on auto parts production or sourcing.

Over the 1970's, Canadians have generally produced more automobiles than they purchased. Between 1973 and 1979, Canadian net exports of finished autos to the U.S.A. averaged 0.244 million units per year or 19.8 per cent of Canadian production.

Total Canadian motor vehicle and parts exports, of which Ontario accounts for approximately 80 per cent, contributed almost \$12 billion to Canadian exports in 1979, and roughly 60 per cent of this total went to the U.S. In spite of Canada's strong export performance, the motor vehicle trade balance recorded a 1979 deficit as the relatively low surplus in passenger automobiles and chassis was offset by a \$6.5 billion deficit in motor vehicle engines and parts.

- While Canada's traditional surplus in passenger automobile trade with the U.S. has dropped sharply because of production-sales mismatches since 1979, the country's automotive trade deficits with the U.S. have been primarily the result of poor performance in engine and parts trade.

MOTOR VEHICLE TRADE BALANCES WITH THE U.S.A.
(Millions of Canadian Dollars)

Table 22

	All Automotive Products (excluding tires)	Cars	Trucks and Other Vehicles	Engines and Parts
1971	225	933	232	-990
1972	72	990	211	-1,129
1973	-377	833	146	-1,356
1974	-975	919	-28	-1,866
1975	-1,715	675	-10	-2,380
1976	-1,043	1,113	375	-2,531
1977	-1,083	1,198	846	-3,127
1978	-646	1,685	1,003	-3,334
1979	-3,207	598	284	-4,089
1980: to date *	-2,805	230	628	-3,663

Source: Statistics Canada and the Canadian Motor Vehicle Parts Manufacturers Association.

* At annual rates

6. Financial Performance in 1980

Although automobile producers have made drastic cuts in production and employment levels, they have not avoided incurring substantial losses. Little improvement is expected for the third quarter of 1980, and industry performance over the whole year is likely to be dismal. Ford is expected to lose U.S. \$2 billion on North American operations this year, while Chrysler's loss will probably be \$1.2 to \$1.7 billion.

AUTO INDUSTRY PROFITS
(Millions of U.S. Dollars, Losses in Brackets)

Table 23

	1979				1980	
	I	II	III	IV	I	II
General Motors	1,260.0	1,190.0	21.4	426.1	155.0	(412.0)
Ford	595.0	512.0	103.0	(41.0)	(164.0)	(468.0)
Chrysler	(53.8)	(207.1)	(460.6)	(375.8)	(448.8)	(568.0)
American Motors	32.0	15.1	10.6	12.8	1.3	(84.9)
Total	1,833.2	1,510.0	(325.6)	22.1	(456.5)	(1532.9)

Source: Business Week

The main issue arising out of these losses is whether the automobile manufacturers will be able to carry out their product development and investment plans. In an effort to increase its market share, G.M. has increased 1980-1985 capital spending plans by \$2 billion (U.S.) However, Ford and Chrysler have reduced their announced 1980-1985 investment by \$2.5 billion and \$2.6 billion respectively. Even if the larger car market recovers in 1981 -- and interruptions in international oil supplies are not out of the question -- consumers will probably demand more fuel efficient large models than Ford and Chrysler now produce. The medium term viability of these two companies will depend on their ability to revamp their production lines. Chrysler's short run survival depends on the success of its K cars, which must compete directly with G.M.'s X cars and with G.M.'s J cars in the second half of 1982. If G.M. adopts an aggressive pricing strategy for its X and J cars, sales of the higher-priced K cars may be insufficient to restore Chrysler's profitability.

IV. OUTLOOK FOR THE FUTURE

1. New Passenger Car Sales Projections

During the 1980's, new passenger car sales in North America will increase more slowly than in the 1970's. Nevertheless, automobile purchases will continue to account for a substantial portion of consumer expenditures.

NEW PASSENGER CAR SALES FORECASTS
(Million of Units)

Table 24

	Chase	<u>United States</u> Wharton	Difference	Canada Data Resources
1980	9.1	9.1	0.0	0.925
1981	9.9	9.4	0.5	0.946
1982	10.6	10.1	0.5	0.938
1983	11.4	10.3	1.1	na
1984	11.7	10.6	1.1	na
1985	11.9	10.5	1.4	na
1986	12.1	11.3	0.8	na
1987	12.3	11.5	0.8	na
1988	na	11.7	-	na
1989	na	12.0	-	na

Sources: Chase Automotive Division, May 1980
Wharton Econometric Forecasting Associates, September 1980
Data Resources of Canada, July 1980.

While there are some differences between the two U.S. demand forecasts, reflecting conflicting views concerning the length and severity of the current recession, both forecasts converge to sales of about 12 million units per year in the late 1980's. During the 1970's, average U.S. auto sales were 10.4 million units per annum. Canadian unit auto sales are also likely to be greater, on average, during the 1980's.

Although the annual level of North American automobile sales in the 1980's will be greater than in the previous decade, average annual growth will probably be lower. Growth in the 1970's averaged 2.7 per cent a year in the U.S. and 3.4 per cent in Canada. Yearly growth of approximately 2 per cent is more likely in the next decade.

A SURVEY OF U.S. AUTO SALES PROJECTIONS
(Average Annual Growth Rate, Per Cent)

Table 25

Source	1981-1990	1981-1985	1985-1990
Data Resources (Summer 1980)	2.3	5.8	-0.5
Chase Econometrics (June 1980)	2.1	5.0	-0.2
Merrill Lynch Inc. (July 1980)	na	4.3	na
Wharton EFA (June 1980)	4.3	5.8	3.1
U.S. Dept. of Energy	2.1	1.9	2.1
Chrysler (May 1980)	na	2.8	na
Ford (June 1980)	2.0	na	na
General Motors (June 1980)	2-2.5	na	na

The bulk of new car sales will come from three sources, each of which is likely to contribute only modestly to increased demand:

- Replacement demand will remain relatively static aside from cyclical fluctuations.
- Population growth will be relatively low in the group of potential drivers.
- Real income gains have a progressively diminishing effect on automobile sales as families increasingly have their car needs filled and spend additional income on other goods and services.

2. New Product Lines and Changing Vehicle Composition

The "best estimate" assumption that the U.S. current dollar price of gasoline will double between 1980 and 1987 yields a market segment forecast:

UNITED STATES AUTOMOBILE DEMAND BY SIZE CLASS
(Thousands of Units, Market Shares in Brackets)

Table 26

	Luxury	Full-Size	Intermediate	Compact	Sub-Compact
1980	598 (0.07)	900 (0.10)	1915 (0.21)	1791 (0.20)	3926 (0.43)
1981	740 (0.07)	990 (0.10)	2173 (0.22)	1990 (0.20)	4020 (0.41)
1982	850 (0.08)	1100 (0.10)	2350 (0.22)	2075 (0.20)	4225 (0.40)
1983	910 (0.08)	1365 (0.12)	2559 (0.22)	2275 (0.20)	4266 (0.37)
1984	932 (0.08)	1456 (0.12)	2621 (0.22)	2365 (0.20)	4275 (0.37)
1985	948 (0.08)	1541 (0.13)	2726 (0.23)	2358 (0.20)	4278 (0.36)
1986	964 (0.08)	1627 (0.13)	2832 (0.23)	2350 (0.19)	4278 (0.35)
1987	980 (0.08)	1715 (0.14)	2879 (0.23)	2365 (0.19)	4312 (0.35)

Source: Chase Automotive Division, May 1980.

Market shares by size class are sensitive to fluctuations in disposable income and to energy prices.

- . In the U.S., a one per cent increase in personal income will lead to 624,000 additional unit auto sales in the first year, 560,000 of which represent higher domestic sales. Of this total increase, 272,000 additional sales are of luxury and full-size cars, followed by 151,000, 108,000, and 93,000 incremental units, descending by size class.

- A 10 per cent increase in the U.S. gasoline price depresses auto sales by 240,000 units in the first year. While import sales increase by 64,000, domestic sales decline by 304,000. In this scenario luxury, full size, intermediate and compact sales drop collectively by 375,000, while subcompact sales rise by 135,000.
- A 20 per cent OPEC oil price increase would lead to a reduction in sales of 337,000 units within a year, all of which would be lost domestic sales. Full size cars lead this drop with 162,000, while intermediate, compact and luxury car sales fall by 79,000, 78,000, and 32,000 respectively. Only subcompact sales rise -- by 16,000 units. It is interesting to note that the scrappage rate in this scenario increases by 0.7 percent, or by 719,000 units in the first year.

The relative stability of market shares does not imply that the North American automobile industry will be able to avoid restructuring production during the first half of the decade, since definitions of the segments will change. For example, a car classified as intermediate in 1980 will be considered full size in 1985. Table 27 identifies 1985 reference vehicles.

1985 REFERENCE VEHICLES

Table 27

	1976 Model	1985 Reference Vehicle	1985 Weight (lbs)
Luxury	Lincoln Continental	1978 Impala	3500
Full Size	Impala	1978 Granada	3200
Intermediate	Grand Prix	1978 Fairmont	2750
Compact	Volare	1978 Citation	2400
Subcompact	Vega	1978 Chevette	1900

Source: Chase Automotive Division, May 1980

Reconfiguring the North American automobile industry will not be simply a matter of substituting currently produced small cars for larger ones, but rather will involve the introduction of completely new models. The following table shows North American manufacturers' view of product development as of spring 1980. Since the automobile market has entered a period of considerable uncertainty, this timetable should be considered only a rough guide.

NEW PRODUCT AND DOWNSIZING TIMETABLE

Table 28

	1981	1982	1983	1984	1985
Luxury/Full Size			Chrysler G.M.	Ford	G.M. Ford
Intermediate		G.M.	Ford	Chrysler	Chrysler
Compact	Ford Chrysler	G.M. Ford		G.M.	A.M.C.
Subcompact	G.M. Ford	A.M.C.	Ford	Chrysler	G.M.

Source: Chase Automotive Division, May 1980.

ESTIMATED U.S. NEWLY-DESIGNED FUEL-EFFICIENT CAPACITY, 1980-1985

(Thousands of Units) Table 29

	1980	1981	1982	1983	1984	1985
General Motors						
- Chevette	400	400	400	400	400	400
- X-Body	800	860	860	860	860	860
- J-Body	-	450	500	500	900	900
- Intermediate/Full Size	-	-	400	2,500	3,000	4,000
Total	1,200	1,710	2,160	4,260	5,160	6,160
Ford						
- Escort/Lynx	-	485	600	600	700	700
- Compact/Intermediate	-	-	-	700	1,300	1,300
- Full Size	-	-	-	-	1,300	1,300
Total	-	485	600	1,300	3,300	3,300
Chrysler						
- Omni/Horizon	300	300	300	300	300	300
- K-Body	-	525	700	900	900	900
Total	300	825	1,000	1,200	1,200	1,200
Volkswagen						
- Rabbit	250	250	250	450	450	450
Total	1,750	3,270	4,010	7,210	10,110	11,110

Source: U.S. Congress.

General Motors has taken the new product development lead successfully introducing Chevette and the X car series. Currently GM plans the introduction of the:

- Front wheel drive J cars in spring 1981
- Redesigned mid sized A cars in fall 1981
- New front wheel drive full sized and luxury cars in 1983.

Ford will introduce its front wheel drive Escort/Lynx models in the fall of 1980, and will replace its compact Fairmont/Zephyr line in the fall of 1982 with a larger version of the Escort/Lynx. Chrysler's survival depends on the success of its K cars, which went into production in August 1980. American Motors intends to introduce two new models every six months in 1981 and 1982, and should be producing an entirely new Renault designed small car by 1982 or 1983.

The rapid shift to new product lines will impose a substantial cost. GM, Ford, Chrysler and A.M.C. are expected to make capital expenditures of \$65 to \$67 billion between now and 1984, nearly three times what they spent between 1975 and 1979.

The economic effects of the new product program can be grouped into three major areas:

- The impact of new automobile technology and materials requirements on supplying industries, specifically, on the Ontario economy;
- The ability of the four North American auto producers to finance necessary research, development and retooling;
- The degree to which new North American models displace offshore automobile imports.

It is clear that North American automobiles of the late 1980's and the 1990's will be substantially different, in terms of technology and materials inputs, from those being produced today. Table 30 summarizes the technical changes which are likely to occur.

ESTIMATES OF FUTURE SOURCES OF IMPROVED FUEL ECONOMY

Table 30

Technology	Market Penetration		Base Cost per Unit (in 1980 Canadian Dollars)
	(Percent)	1985 1995	
. 4 speed automatic transmission	23	50	209
. weight reduction*	0	100	100
. turbocharger	10	30	203
. electronic controls	75	100	116
. diesel	5	25	640
. programmed combustion	0	10	407
. front-wheel drive	50	90	174
. aerodynamics	50	100	16
. lubricants	0	80	17
. improved accessories	50	100	17
. reduced rolling resistance	10	30	29

Source: United States Congressional Budget Office, April 1980

* Assumes a second round of weight reduction

3. Producer Ability to Adapt to Market Change

The long run market shifts reviewed in the previous section have caused automobile assemblers to adopt a strategy of introducing new models over the next five years, and eliminating many they now produce. Sector specific issues centre around the financial ability of domestic assemblers to carry out these plans, and the financial and technological capacity of the Ontario parts industry to respond to them. In 1978, Ontario accounted for 98 per cent of Canadian value added in motor vehicle parts and accessories (excluding tires and tubes, automobile glass, and batteries). Over 80 per cent of Canadian automotive parts production is exported to the U.S. Thirty per cent of these parts are produced in-house by the "big three"; 30 per cent are produced by subsidiaries of U.S. parts multinationals; and 40 per cent are produced by independent parts manufacturers. To maintain its North American market share, the Ontario parts industry will have to develop new products, and retool to produce them. Although forecast Canadian investment in this sector -- most of which will be directed to Ontario -- is high relative to levels in the 1970's, competition from U.S. parts producers will be severe.

FORECAST CANADA AND U.S. AUTOMOTIVE PARTS INVESTMENT:
NEW MACHINERY AND CONSTRUCTION.
(1980 Canadian Dollar Millions)

Table 31

	Canada	United States	Canada as a Per Cent of North America
1975-1979 average	159.7	2439.4	6.1
1980	909.6	4760.0	16.0
1981	480.0	5690.0	7.8
1982	410.0	6900.0	5.6
1983	530.0	8800.0	5.7
1984	700.0	9790.0	6.7
1985	830.0	10250.0	7.5
Total 1980-1985	3859.6	46190.0	7.7

Source: Automotive Parts Manufacturers Association of Canada, July 1980.

Vehicle assemblers now appear more willing to purchase components which previously would have been made in-house, in order to ease pressures on their working capital. Among the major North American parts suppliers, large firms are gaining at the expense of smaller ones, since the former are in a better position to finance necessary research and development.

North American automobile assemblers have been forced to adopt ambitious investment plans for the 1980's despite their current financial difficulties. Between 1980 and 1985, North American investment by the four domestic assemblers is expected to be \$75 billion, of which Canada is to receive approximately \$4.8 billion. This amount will be insufficient to close Canada's automotive trade deficit with the U.S.A.

While G.M. and Ford will probably be able to fulfill their expansion plans, Chrysler may have considerable difficulties, in spite of recent government -- sponsored loan guarantees. Chrysler's financial performance during the 1970's was substandard. Its high debt to equity ratio implies:

- Above average interest costs per car and
- Possible lack of access to debt funding after loans secured by various governments have been used.

FINANCIAL PERFORMANCE HISTORY: "BIG THREE"
(Dollar Millions)

Table 32

	Net Income (Loss)			Return on Equity (%)			Debt/Equity		
	GM	Ford	Chrysler	GM	Ford	Chrysler	GM	Ford	Chrysler
1975	\$1457	\$375	\$ (302)	9.6	5.1	-	0.09	0.24	0.44
1976	3375	1143	491	20.2	13.8	15.0	0.07	0.20	0.37
1977	3881	1945	190	21.2	19.8	5.6	0.07	0.16	0.42
1978	4079	1848	(254)	20.0	16.4	-	0.06	0.12	0.41
1979	3369	1359	(1276)	-	-	-	-	-	-

Source: U.S. Congress Hearings on Chrysler Corporation Financial Situation

The Chase Automotive Division forecasts North American automobile manufacturers will require \$137 billion (1978 Canadian dollars) in capital between 1979 and 1987. Most of this will be used for asset maintenance and compliance with government standards. Of this \$137 billion, approximately \$103 billion will be generated by the automobile producers, and \$34 billion will be required from external sources.

4. Location of Production Facilities

The 1965 Canada - U.S. automotive agreement guarantees Canada automobile assembly production in relation to Canadian sales. The treaty does not cover after-market automobile parts or non North American automobile assemblers. These two areas could have a major effect on the Ontario economy.

Due to the assemblers' intentions to produce new vehicle types while narrowing the range of models they offer, and to undertake large investments while currently experiencing operating losses, the auto parts manufacturers may be forced to:

- Discontinue the production of many parts they currently make
- Design newer parts, many more technologically sophisticated than the ones they replace, and
- Increase the size of their production runs while narrowing the range of parts they make.

Offshore parts manufacturers have technological and production advantages over their Ontario counterparts in this new environment. Therefore, there is a danger that the Ontario auto parts industry will suffer a loss in its North American market share during the 1980's. According to a recent survey, industry managers expect the value of offshore parts in a domestic car to rise from the current level of 4 to 7 per cent to 10 per cent by 1985 and 15 per cent by 1990.

It is possible that non-North American auto producers will locate production facilities in the U.S.A. to serve the entire North American market. To achieve economies of scale, newly constructed assembly plants must produce at least 250,000 to 300,000 units per year. Since the Canadian market for any given import model is substantially less than this number, Ontario may not receive any investment by offshore producers. Volkswagen already has one plant in Pennsylvania and will open another in the U.S.A. Nissan and Honda have announced firm plans to build factories in the U.S., while Toyota is considering such a move.

APPENDIX 1

POLICY ALTERNATIVES: AN OVERVIEW OF RECENT PROPOSALS AND POTENTIALS

In addressing the current problems of the auto industry it is important to distinguish between long-run structural concerns and the more immediate problems arising from the recession. The main long-run issues are:

- the ability of the North American producers to finance the capital investment requirement to produce substantially more fuel-efficient vehicles over the next several years
- the ability of the Ontario parts industry to develop and produce new parts in order to maintain its already small North American market share.

The current recession has had some impact on Canadian auto sales and has sharply diminished U.S. auto sales. Current Canadian automobile production is therefore running about 20 per cent below 1979 levels. Depending on the paths of Canadian oil prices and interest rates, Ontario auto sector output and employment should rise significantly when the U.S. economy recovers.

Numerous policies have been proposed to deal with the auto industry situation. The following is an overview synopsis of some of the major alternatives open to the Ontario government.

1. Accelerated Depreciation

Tax-based aid is likely to have disproportionate effects on different companies. With all auto companies reporting losses faster depreciation will only be of assistance if it can be used to generate tax refunds by offsetting profits in previous years. Any auto assembler which makes a profit in 1980 will, of course, benefit more than ones which experience losses.

2. Grants

Ontario has already provided considerable grant aid to the auto sector. Ford has received \$26.4 million from the Ontario government for a new engine plant, and parts makers have been given over \$6 million in grants. The key consideration here is to avoid granting money for investment which would have been undertaken in any case. Unfortunately, there is no foolproof way of identifying these situations.

Ontario is in direct competition with Ohio, Michigan, New York and Tennessee, all of which are prepared to offer substantial grant aid for new auto sector investment. The Government of Canada is also prepared to subsidize new auto sector investment, either on an ad hoc basis or more systematically through the Department of Regional Economic Expansion. DREE money is available to firms locating in eastern Ontario.

Another possible target of grant aid is research and development by parts producers. The Enterprise Development Program already provides grants of up to 75 per cent of eligible costs for companies with annual sales below \$10 million, and up to 50 per cent for companies with sales over \$10 million. The Automobile Parts Manufacturers Association of Canada has requested that this program be enlarged.

3. Loan Guarantees

Chrysler has already received loan guarantees from the U.S. and Canadian federal governments. While loan guarantees have no immediate budget effect, there is the danger that the recipient will fail. Such off-budget financing mechanisms do have hidden costs, however, inasmuch as there are real risks that the loans may not be fully repaid.

4. Government Rebates for New Car Buyers

This is a policy aimed at moderating the severity of the temporary downturn in automobile sales. Several considerations should be noted:

- Temporary rebates may simply shift new car purchases forward in time, in effect spreading the effects of the recession over a longer period.
- Canadian auto sales have not declined as severely as U.S. sales, and the recovery of the Canadian industry is linked to the health of the U.S. economy, at least in the short run.
- Auto dealers may raise their prices in response to government rebates, weakening their effect on auto sales.
- Auto sales in Canada and the U.S. will probably increase in 1980:4 in any case.

Chrysler estimates that in the short run, a one per cent decrease in the price of new cars will cause a 2.5 per cent increase in sales, while in the long run, the same one per cent price decrease leads to a one per cent sales increase. This estimate is thought to be rather high.

A temporary reduction in the sales tax on automobiles would have the same effect as a government rebate program.

5. Bounties on Old Cars

Chrysler has proposed giving new car buyers a tax credit of \$1,500 for every pre-1976 car traded in on a new domestic car in the U.S. This alternative has some merit if it is believed that the present abnormally low scrappage rates will continue for some time. Domestic auto production would be stimulated, while fleet fuel economy would improve as older, relatively fuel inefficient automobiles were exchanged for higher mileage new ones.

Both the bounty and the rebate options would likely prove to be very expensive, in terms of government expenditure per new car sale generated, since a large proportion of the scrappage and new sales under these alternatives would have occurred in any case.

6. Automobile Repair Tax

A tax on automobile repairs is likely to have the same general effects on new car sales as the old car bounty. However, in this case, the policy increases government revenue. Assuming that older cars require more maintenance than new ones, the automobile repair tax will increase the scrappage rate, particularly of pre-1976 vintage cars, thereby increasing fleet fuel efficiency.

7. Auto Pact Considerations

Provincial measures to stimulate Ontario sales of North American produced automobiles are ultimately aimed at increasing employment and production in the Ontario auto sector. Ontario government demand side policies will therefore be successful to the extent that North American auto producers adhere to the production-to-sales requirements of the Auto Pact. Roughly 100 exemptions have been granted to motor vehicle manufacturers in the past 15 years. Given the announced 1981 Ontario auto assembly configuration - which will be weighted toward large cars again - an important determinant of the success of provincial attempts to increase Ontario sales of domestic cars will be the strength of overall North American demand for the models which Ontario produces. If demand for these models is brisk, then policies targeted at in-province demand will succeed. If the large car demand remains flat, then it is doubtful that auto producers will make cars which they are unable to sell in order to comply with loosely enforced treaty obligations.

8. Provincial Investment Incentives

The short-term health of the auto sector depends on the state of the North American economy, and temporary provincial demand policies are unlikely to have a significant impact. Ontario auto production and employment will recover from the current slump when the entire economy recovers, although employment levels will be influenced by productivity. Given the strong linkages between automobile production and the Ontario economy, provincial policies aimed at stimulating investment in new auto assembly facilities could prove to be a major component of an Ontario industrial strategy approach to current structural problems. Each additional auto assembly job generates 2.5 jobs in Ontario.

Two inducements which the Government of Ontario may use are:

- guaranteed electricity rates for 15 years
- free long-term leases on provincially-owned industrial land.

Furthermore, investment directed east of Oshawa will be eligible for substantial federal DREE grants. Since auto makers intend to invest over \$100 billion in North America between 1980 and 1987, and since other jurisdictions, particularly Michigan, Ohio, New York and Tennessee are prepared to offer large investment incentives, Ontario must rely on more than complaints that it is not receiving its "fair share" if auto assembly plants are to be attracted to this province. The employment and overall tax impacts of additional automobile assembly justify a more active auto-sector development policy.

9. Reduced Regulation

The sun-belt states appear to have been successful in their attempts to attract new investment by offering a more favourable labour environment, from the companies' point of view, than their northern counterparts. Some Japanese auto producers have been hesitant to locate plants in the U.S. because of what they perceive as a relatively hostile labour climate. It may be possible to attract one of these firms to Ontario on the strength of some modifications to current provincial labour laws and employment, safety and environmental standards.

10. Research and Development

The "big four" auto assemblers do most of their research and development in the U.S., and essentially none in Ontario. In order to design "world cars", Ford and G.M. have utilized the expertise of their European divisions. Chrysler is relying on Peugot to supply 4 cylinder engines, while American Motors expects to produce a Renault-designed car in 1983.

Several options have been proposed in the hope of attracting some auto-sector research and development to Ontario:

- A \$10 million grant has been made available to Chrysler for the construction of a research facility in Windsor.
- The "big 4" subsidiaries in Canada paid \$375 million in R & D charges to their parents in 1977. Ontario could levy a tax on these charges, based on auto sales rather than production. Refunds could be granted for R & D expenditures in Ontario.

11. Joint Ventures, etc.

It may be feasible for the government to set up a parts marketing agency in order to facilitate the transfer of information about Ontario parts supplier capabilities and auto assembly parts requirements.

The government may also choose to become more actively involved in the parts sector by undertaking joint ventures with some of the more promising parts firms. This option is extremely risky, since the industry is undergoing rapid changes, and there is the possibility that the government may find itself committed to non-viable firms. Pressures to continue loss-making operations would probably be severe.

APPENDIX 2

The Auto Pact Safeguards

The Canada - U.S. automotive agreement, provisionally enforced in 1965 provides for duty-free two-way trade in:

- Automobiles, when imported by a manufacturer;
- All parts, except tires and tubes, used as original equipment;
- Buses, when imported by a manufacturer;
- All bus parts, except tires and tubes, used as original equipment;
- "Specified commercial vehicles" such as trucks and parts, except tires and tubes, used as original equipment.

Each manufacturer must satisfy two requirements to qualify for duty free treatment:

- The ratio of a given manufacturer's "net sales value" of a vehicle type such as car, bus or truck produced in Canada to that manufacturer's net sales value of Canadian sales of that vehicle type must be greater than or equal to 0.75.
- Canadian value-added in the production of a vehicle type by a given manufacturer must be greater than the corresponding value-added from August 1, 1963 to July 31, 1964.

Technically, the government of Canada may levy a 14.2 per cent duty on an entire year's imports of vehicles and parts by a company if it fails to comply with the provisions of the agreement. To-date, no company has been forced to pay a full year's duty as approximately 100 exemptions have been granted over the past fifteen years.

The Auto Pact may be terminated by either government on twelve months notice.

The Pact shielded Canada from some of the effects of the 1979-1980 U.S. auto sales slump. Canadian car production declined 23 per cent during the first half of 1980, over the same period in 1979, while U.S. car output dropped 30 per cent. Nevertheless, there will be strong pressures for suspension of the safeguards for the 1980 and 1981 model years, since Canada's automobile assembly configuration does not correspond to North American market requirements. Canadian demands that producers favour Canada in assembling large and intermediate size cars here will fail to the extent that:

- Consumers resist buying these cars,
- The U.S. government, under pressure from unions and others, is unsympathetic.

Consumer large-car resistance was evident in 1980, although it is not clear whether this will be the case in 1981. The second point is becoming increasingly important. One quarter of a million U.S. auto sector workers were on direct layoff in 1980:2. A Congressional Budget Office "input-output" analysis estimated that the drop in U.S. auto output had resulted in 350,000 workers in supplying industries being laid off, along with a further 100,000 dealer employees. The political impact of 700,000 workers unemployed due to events in one sector has been significant. The U.S. administration has responded to pressures from such groups as the U.A.W. and some auto producers by threatening to restrict Japanese imports and by drafting a "reindustrialization" proposal.

The automobile companies are pushing for the complete elimination of Auto Pact safeguards, claiming that they impair flexibility and inhibit retooling by penalizing companies for plant downtime. Given the current U.S. political environment and the economics of automobile production, it is unlikely that Canada will be able to gain significant concessions by "renegotiating" the Auto Pact. Negotiation requires bargaining power, and the threats of cancellation of the agreement, the permanent closure of assembly plants, and, in the case of Chrysler and possibly American Motors, possible company bankruptcy imply a significant downside risk for Canada.

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